IN THE CLAIMS:

1.   (Currently amended) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given direction to allow a command correlated with the direction to be selected, the multi-way input device comprising:

an operational failure judgment section judging if selective operation of an operator is involved in an operational failure;

an operational failure memory section storing information, related to operational failures judged by the operational failure judgment section, as an operation history;

an operational failure analysis section analyzing the operation history stored in the operational failure memory section for thereby judging a tendency of the operational failures; and

an adjusting section adjusting a moveable ~~mode~~ range of the operation terminal to avoid the operational failures in response to a resulting analysis made by the operational failure analysis section.

2.   (Original) The multi-way input device according to claim 1, wherein: the operational failure judgment section judges that, if a subsequent selective operation is executed within a given time interval subsequent to a preceding selective operation and a resulting command is different from a selected command, the preceding selective operation is involved in an operational failure and the subsequent selective operation is involved in a correct operation;

the operational failure memory section stores a frequency of correct selective operations, a frequency of the operational failures and directions, in which the operational failures occur, in a correlated relationship for each operational direction in which the operation terminal is operated;

the operational failure analysis section judges an occurrence tendency of the operational failures based on the frequency of the correct selective operations, the frequency of the operational failures and the respective directions, in which the operational failures occur, for each operational direction; and

the adjusting section corrects a moveable range of the operation terminal in a way to be expanded toward an operational direction with a tendency of occurrence in the operational failures.

3.   (Original) The multi-way input device according to claim 1, wherein:

the operational failure analysis section computes an occurrence frequency, in which the operational failures occur in respective operational directions, in a combination between one operational direction and an adjacent operational direction; and

the adjusting section expands a moveable range of the operation terminal toward a direction with a high occurrence frequency of the operational failures.

4.   (Original) The multi-way input device according to claim 3, wherein:

under a situation where, during operations of the operation terminal in the one and adjacent operational directions, the operational failures occur in the mutually adjacent

operational directions at the same occurrence frequency, the adjusting section expands the moveable range of the operation terminal toward the respective operational directions.

5.   (Original) The multi-way input device according to claim 1, further comprising:

an operator discriminating section discriminating operators; wherein

the operational failure memory section stores an operational failure history for each operator.

6.   (Original) The multi-way input device according to claim 5, wherein:

the operator discriminating section is mounted on a vehicle to enable the operation terminal to be operated from a driver's seat and an assistant driver's seat and detects if a seated position of the operator belongs to the driver's seat or the assistant driver's seat for thereby discriminating the operator based on the seated position.

7.   (Original) The multi-way input device according to claim 5, wherein:

the operator discriminating section detects the operator in dependence on detected conditions resulting from detection sensors installed in the vicinities of right and left sides of the operation terminal, respectively.

8.   (Original) The multi-way input device according to claim 5, wherein:

the adjusting section corrects the moveable range of the operation terminal in a whole operational direction depending on the seated position of the operator.

9.   (Currently amended) The multi-way input device according to claim 1, further comprising:

an operation monitoring section monitoring completed selective operations and operational directions of the operation terminal; and wherein

the operational failure memory section accumulatively stores an operational frequency, for each operational direction associated with the command, and a frequency of the operational failures, for the each operational direction, judged by the operational failure judgment section, as an operation history for the ~~elective~~ selective operation;

the operational failure analysis section calculates an erroneous operation rate, for the each operational direction, based on the operation history stored in the operational failure memory section;

the adjusting section setting and altering a repulsion characteristic, to be imparted to the operator through the operation terminal, depending on an operational displacement value caused by tilting movement of the operation terminal initiated by the operator in a radial direction, and responsive to the erroneous operation rate to allow a repulsion characteristic, that increases depending on an operational displacement value as the erroneous operation rate related to the operational direction increases, to be set in a steeper gradient than that of a standardized repulsion or to allow an operational displacement position, at which the selective operation is completed, to be set to a position remoter than a standardized displacement position.

10.   (Currently amended) A method of avoiding an operational failure in a multi-way input device adapted to perform input operation through tilting or sliding movements of an

operation terminal (21) in a given operational direction to allow a command, correlated with the operational direction, to be selected, the method comprising:

judging if selective operation of an operator is involved in an operational failure;

storing information, related to the operational direction in which the operational failure occurs, as an operation history in the presence of the operational failure;

judging a tendency of operational failures by analyzing the operation history; and

correcting a moveable range of the operation terminal so as to avoid the operational failure.

11. (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given direction to allow a command, correlated with the direction, to be selected, the multi-way input device comprising:

an operation monitoring section monitoring completed selective operation and an operational direction of the operation terminal;

an operational failure judgment section judging if selective operation of an operator is involved in an operational failure;

an operational failure memory section accumulatively storing an operational frequency, for each operational direction associated with the command, and a frequency of operational failures, for the each operational direction, judged by the operational failure judgment section, as an operation history;

an operational failure analysis section calculating an erroneous operation rate, for the each operational direction, based on the operation history stored in the operational failure memory section; and

an operational load control section setting and altering a repulsion characteristic, to be imparted to the operator through the operation terminal, depending on an operational displacement value caused by tilting movement of the operation terminal initiated by the operator in a radial direction; wherein

the operational load control section allows a repulsion characteristic, that increases depending on an operational displacement value as the erroneous operation rate of the operational direction increases, to be set in a steeper gradient than that of a standardized repulsion or to allow an operational displacement position, at which the selective operation is completed, to be set to a position remoter than a standardized displacement position.

12.   (Withdrawn) The multi-way input device according to claim 11, wherein:

the operational load control section allows an repulsion characteristic, that when the operator tilts the operation terminal, is imparted to the operator through the operation terminal depending on an operational displacement value in a radial direction to be set such that, when lying in a region of a low operational displacement value, a repulsion increases depending on the operational displacement value and, if the operational displacement value further increases, a temporary rapid drop in the repulsion, representative of completed selective operation, and a subsequent rapid increase in the repulsion are provided to create a click feeling, and allows the repulsion characteristic, that increases depending on the operational displacement value as the erroneous operation rate related to the operational direction increases, to be set in the steeper gradient than that of the standardized repulsion while, at the same time, allowing an operational displacement position, at which the click feeling occurs, to be set to a position remoter than that of a standardized operational displacement position.

13.   (Withdrawn) The multi-way input device according to claim 11, wherein:

the operation monitoring section monitors, in addition to the completed selective operation and the operational direction, beginning of operation and interruption of the operation; and

the operational load control section standardizes the repulsion characteristic regardless of a value of the erroneous operation rate related to the operational direction in a case where beginning of a subsequent operation is detected within a given time interval after interruption of a preceding operation has been detected and the operational direction of the subsequent operation is found to be identical to the operational direction of the preceding operation prior to the interruption thereof.

14.   (Withdrawn) The multi-way input device according to claim 11, wherein:

the operation monitoring section monitors, in addition to the completed selective operation and the operational direction, beginning of operation and interruption of the operation;

the operational failure judgment section judges such that, if a subsequent selective operation is executed within a given time interval subsequent to a preceding selective operation and a difference exists in content between selected commands, the preceding selective operation is failed and the subsequent selective operation is correct;

the operational failure memory section stores the frequency of the operations, the frequency of the operational failures, and a frequency operations in re-operated operational directions in relation to the operational directions that are failed, for each operational direction;

the operational failure analysis section calculates a re-operation probability related to the re-operated operational directions in relation to the operational directions that are failed; and

the operational load control section allows a repulsion characteristic, that for each operational direction, increases depending on an operational displacement value as the re-operation probability increases, to be set in a slower gradient than that of a standardized repulsion or to allow the operational displacement position, at which the selective operation is completed, to be set to a position closer to a standardized displacement position.

15.   (Withdrawn) The multi-way input device according to claim 11, wherein:

the operational failure analysis section calculates an operation probability related to a relevant operational direction associated with a selection leg of a selection menu screen; and

the operational load control section allows a repulsion characteristic, that if the erroneous operation rate and an operation probability associated with the relevant operational direction satisfy a given condition, increases depending on an operational displacement value for the relevant operational direction, to be set in a slower gradient than that of a standardized repulsion or to allow the operational displacement position, at which the selective operation is completed, to be set to a position shorter than that of a standardized displacement position.

16.   (Withdrawn) The multi-way input device according to claim 15, wherein:

if an operation probability in the operational direction, wherein the operation probability is maximum, and an erroneous operation rate satisfy a given condition, the operational load control section drivingly tilts the operation terminal in the operational direction

with the maximum operation probability when switched to a relevant selection menu screen for thereby automatically executing selection of the operational direction.

17.   (Withdrawn) The multi-way input device according to claim 10, wherein:

the operational failure memory section accumulatively stores an operation history in compliance with each selection menu screen; and

the operational failure analysis section analyzes an operational failure history for each selection menu screen and stores resulting information.

18.   (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the multi-way input device comprising:

an operation monitoring section monitoring beginning of operation in an operational direction in compliance with the command of the operation terminal, completed operation and a relevant operational direction;

an operational failure judgment section judging if selective operation initiated by the operator is involved in an operational failure;

an operational failure memory section accumulatively storing an operational frequency, for each operational direction associated with the command, and a frequency of operational failures, for the each operational direction, judged by the operational failure judgment section, as an operation history;

an operational failure analysis section calculating an erroneous operation rate, for the each operational direction, based on the operation history stored in the operational failure memory section; and

a vibration control section controlling vibration of the operation terminal; wherein when a signal indicative of the beginning of the operation in the relevant operational direction, the vibration control section controls the vibration depending on the erroneous operation rate correlated with the relevant operational direction.

19. (Withdrawn) The multi-way input device according to claim 18, wherein:

the operation monitoring section monitors, in addition to the beginning of the operation, the relevant operational direction and the completed operation, interruption of the operation; and

the vibration control section operates such that, if beginning of a subsequent operation is detected within a given time interval after interruption of a preceding operation has been detected and the operational direction in which the subsequent operation takes place is identical to the operational direction, in which the preceding operation takes place, prior to the interruption thereof, the operation terminal is prevented from being vibrated regardless of a value of the erroneous operation rate in the operational direction.

20. (Withdrawn) The multi-way input device according to claim 18, wherein:
the operational failure memory section accumulatively stores an operation history in compliance with each selection menu screen; and

the operational failure analysis section analyzes an operational failure history for each selection menu screen and stores resulting information.

21.   (Withdrawn) A method of avoiding an operational failure in a multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the method comprising:

monitoring completed selective operation of the operation terminal and an operational direction;

judging if selective operation of an operator is involved in an operational failure; accumulatively storing operational frequency for the operational direction in compliance with the command, and an operational failure frequency for the operational direction as an operational failure history for the selective operation;

calculating an erroneous operation rate for the operational direction based on the operational failure history that is stored;

setting and altering a repulsion characteristic, to be imparted to the operator through the operation terminal when the operation terminal is tilted by the operator, depending on an operational displacement value in a radial direction; and

setting a repulsion characteristic, that increases depending on the operational displacement value as the erroneous operation rate related to the operational direction increases, in a way to vary in a steeper gradient than that of a standardized repulsion or setting an operational displacement position, at which the selective operation is completed, to a position which is remoter than that of a standardized displacement position.

22.　(Withdrawn) A method of avoiding an operational failure in a multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the method comprising:

monitoring beginning of operation in an operational direction in compliance with the command of the operation terminal, completed   operation, and the operational direction;

judging if selective operation of an operator is involved in an operational failure;

accumulatively storing operational frequency for the operational direction in compliance with the command, and an operational failure frequency for the operational direction as an operational failure history for the selective operation;

calculating an erroneous operate rate for the operational direction based on the operational failure history that is stored; and

controlling vibration of the operation terminal depending on the erroneous operation rate related to a relevant operational direction when a signal, indicative of the beginning of the operation in the relevant operational direction, is detected.

23.　(Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the multi-way input device comprising:

an operational history memory section accumulatively storing an operational locus of an operation terminal for every operation of the operation terminal;

an operational history analysis section statistically processing distribution of operational loci that are accumulatively stored; and

a moveable area control section controllably altering a moveable area, in which the operational direction of the operation terminal associated with the command is determined, based on a statistical value of distribution of the operational loci obtained by the operational history analysis section.

24.   (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the multi-way input device comprising:

an operational history memory section accumulatively storing an operational locus of an operation terminal for every operation of the operation terminal;

an operational history analysis section statistically processing distribution of operational loci that are accumulatively stored; and

an operational direction discriminating section monitoring a locus of the operation terminal for every operation thereof and discriminating an operational direction based on distribution of the operational loci.

25.   (Withdrawn) The multi-way input device according to claim 24, further comprising:

a discriminative area control section controllably altering an operational direction discriminative area, for discriminating an operational direction of the operation terminal associated with the command, based on a statistical value of distribution of the operational loci.

26.   (Withdrawn) The multi-way input device according to claim 23, wherein:

the operational history memory section accumulatively stores operational direction angles, of the operation terminal with respect to a given reference direction, as the operational loci of the operation terminal for the every operational direction associated with the command;

the operational history analysis section statistically processes distribution of the operational direction angles for the every operational direction associated with the command; and

the moveable area control section sets a center direction angle of the moveable area in a way to comply with an average of the operational direction angles for the every operational direction associated with the command.

27.   (Withdrawn) The multi-way input device according to claim 25, wherein:
the operational history memory section accumulatively stores operational direction angles, of the operation terminal with respect to a given reference direction, as the operational loci of the operation terminal;

the operational history analysis section statistically processes distribution of the operational direction angles for the every operational direction associated with the command; and

the moveable area control section sets a center direction angle of the operational direction discriminative area in a way to comply with an average of the operational direction angles for the every operational direction associated with the command.

28. (Withdrawn) The multi-way input device according to claim 25, wherein:
the operational history memory section accumulatively stores operational direction angles, in which the operation terminal enters the operational direction discriminative area, formed with respect to a given reference direction, as the operational loci of the operation terminal for the every operational direction associated with the command;

the operational history analysis section statistically processes distribution of the operational direction angles for the every operational direction associated with the command; and

the operational direction discriminating section discriminates the operational direction of the operation terminal through discriminative calculation using the operational direction angles and distribution of the operational direction angles with respect to an operational direction discriminative area, which the operation terminal enter, and an adjacent operational direction discriminative area, respectively.

29. (Withdrawn) The multi-way input device according to claim 25, wherein:
the operational history memory section accumulatively stores operational direction angles, in which the operation terminal enters the operational direction discriminative area of the operation terminal, formed with respect to a given reference direction, as the operational loci of the operation terminal, and operational direction vectors each with an angle between a travel

direction of the operation terminal and the given reference direction before and after the operation terminal enters the operational direction discriminative area, for the every operational direction associated with the command;

the operational history analysis section statistically processes distribution of the operational direction angles and distribution of the operational direction vectors for the every operational direction associated with the command; and

the operational direction discriminating section discriminates an operational direction of the operation terminal and an operational direction vector through discriminative calculation using the distribution of the operational direction angles and the distribution of the operational direction angle with respect to an operational direction discriminative area, which the operation terminal enter, and an adjacent operational direction discriminative area, respectively.

30. (Withdrawn) The multi-way input device according to claim 23, wherein: the operational history memory section accumulatively stores the operational loci for each selectable direction number type in an operational direction associated with a selection leg arrangement of the command; and

the operational history analysis section statistically processes distribution of the operational loci for the each selectable direction number type related to the operational direction.

31. (Withdrawn) The multi-way input device according to claim 24, wherein: the operational history memory section accumulatively stores the operational loci for each selectable direction number type in an operational direction associated with a selection leg arrangement of the command; and

the operational history analysis section statistically processes distribution of the operational loci for each selectable direction number type related to the operational direction.

32.   (Withdrawn) The multi-way input device according to claim 23, further comprising:

an operator discriminating section discriminating an operator; wherein

the operational history memory section accumulatively stores the operational loci for each operator; and

the operational history analysis section statistically processes distribution of the operational loci for each operator.

33.   (Withdrawn) The multi-way input device according to claim 24, further comprising:

an operator discriminating section discriminating an operator; wherein

the operational history memory section accumulatively stores the operational loci for each operator; and

the operational history analysis section statistically processes distribution of the operational loci for each operator.

34.   (Withdrawn) The multi-way input device according to claim 32, wherein:

the operator discriminating section is mounted on a vehicle to enable the operation terminal to be operated from a driver's seat and an assistant driver's seat and detects if a

seated position of the operator belongs to the driver's seat or the assistant driver's seat for thereby discriminating the operator depending on the seated position.

35.   (Withdrawn) The multi-way input device according to claim 33, wherein:

the operator discriminating section is mounted on a vehicle to enable the operation terminal to be operated from a driver's seat and an assistant driver's seat and detects if a seated position of the operator belongs to the driver's seat or the assistant driver's seat for thereby discriminating the operator depending on the seated position.

36.   (Withdrawn) The multi-way input device according to claim 32, wherein:

the operator discriminating section detects the operator according to a detected condition of a detection sensor installed in the vicinities of right and left sides of the operation terminal.

37.   (Withdrawn) The multi-way input device according to claim 33, wherein:

the operator discriminating section detects the operator according to a detected condition of a detection sensor installed in the vicinities of right and left sides of the operation terminal.

38.   (Withdrawn) A method of avoiding an operational failure in a multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the method comprising:

accumulatively storing operational loci of the operation terminal for every operation of the operation terminal;

statistically processing distribution of the operational loci that are accumulatively stored; and

altering and controlling a moveable area, for determining an operational direction of the operation terminal associated with the command, based on a statistical value of distribution of the operational loci that are statistically processed.

39.   (Withdrawn) A method of avoiding an operational failure in a multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the method comprising:

accumulatively storing operational loci of the operation terminal for every operation of the operation terminal;

statistically processing distribution of the operational loci that are accumulatively stored; and

monitoring a locus for each operation of the operation terminal and discriminating an operational direction based on distribution of the operational loci that are statistically processed.

40.   (Currently amended) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given direction to

allow a command correlated with the direction to be selected, the multi-way input device comprising:

operational failure judging means for judging if selective operation of an operator is involved in an operational failure;

operational failure storing means for storing information, related to operational failures judged by the operational failure judging means, as an operation history;

operational failure analyzing means for analyzing the operation history stored in the operational failure storing means for thereby judging a tendency of the operational failures; and

adjusting means for adjusting a moveable ~~mode~~ range of the operation terminal to avoid the operational failures in response to a resulting analysis made by the operational failure analyzing means.

41.   (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given direction to allow a command, correlated with the direction, to be selected, the multi-way input device comprising: operation monitoring means for monitoring completed selective operation and an operational direction of the operation terminal;

operational failure judging means for judging if selective operation of an operator is involved in an operational failure;

operational failure storing means for accumulatively storing an operational frequency, for each operational direction associated with the command, and a frequency of

operational failures, for the each operational direction, judged by the operational failure judging means, as an operation history;

operational failure analyzing means for calculating an erroneous operation rate, for the each operational direction, based on the operation history stored in the operational failure storing means; and

operational load control means for setting and altering a repulsion characteristic, to be imparted to the operator through the operation terminal, depending on an operational displacement value caused by tilting movement of the operation terminal initiated by the operator in a radial direction; wherein

the operational load control means allows a repulsion characteristic, that increases depending on an operational displacement value as the erroneous operation rate of the operational direction increases, to be set in a steeper gradient than that of a standardized repulsion or to allow an operational displacement position, at which the selective operation is completed, to be set to a position remoter than a standardized displacement position.

42. (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the multi-way input device comprising:

operation monitoring means for monitoring beginning of operation in an operational direction in compliance with the command of the operation terminal, completed operation and a relevant operational direction;

operational failure judging means for judging if selective operation initiated by the operator is involved in an operational failure;

operational failure storing means for accumulatively storing an operational frequency, for each operational direction associated with the command, and a frequency of operational failures, for the each operational direction, judged by the operational failure judging means, as an operation history;

operational failure analyzing means for calculating an erroneous operation rate, for the each operational direction, based on the operation history stored in the operational failure storing means; and

vibration control means for controlling vibration of the operation terminal; wherein

when a signal indicative of the beginning of the operation in the relevant operational direction, the vibration control means controls the vibration depending on the erroneous operation rate correlated with the relevant operational direction.

43.   (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the multi-way input device comprising:

operational history storing means for accumulatively storing an operational locus of an operation terminal for every operation of the operation terminal;
operational history analyzing means for statistically processing distribution of operational loci that are accumulatively stored; and

moveable area control means for controllably altering a moveable area, in which the operational direction of the operation terminal associated with the command is determined, based on a statistical value of distribution of the operational loci obtained by the operational history analyzing means.

44.   (Withdrawn) A multi-way input device adapted to perform input operation through tilting or sliding movements of an operation terminal in a given operational direction to allow a command, correlated with the operational direction, to be selected, the multi-way input device comprising:

operational history storing means for accumulatively storing an operational locus of an operation terminal for every operation of the operation terminal;
operational history analyzing means for statistically processing distribution of operational loci that are accumulatively stored; and

operational direction discriminating means for monitoring a locus of the operation terminal for every operation thereof and discriminating an operational direction based on distribution of the operational loci.